

Dorothea McCarthy

NOTE ON THE VOCAL SOUNDS OF A
BLIND-DEAF GIRL.

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blind chicks fell off a few times on the blind side, but did not jump. When the pedestal was lowered to two inches, all hopped off without delay with no differences observable between the two groups of chicks.

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NOTE ON THE VOCAL SOUNDS OF A BLIND-DEAF GIRL

The subject of these observations is a girl ten years of age who has been both deaf and blind since birth or from very early infancy. In view of the report in the literature on the vocal sounds of Laura Bridgman by Francis Lieber,¹ a comparative note on another child so handicapped is of interest here. This child has been observed for an hour or more nearly every day for the past three months, and her vocal sounds have been recorded as accurately as possible by two observers.²

Vocalizations are not frequent in this child. They occur rather spasmodically for somewhat prolonged periods of vocal play. She is likely to engage in this pastime in the evening after she has been put to bed. Such spells of vocalizing occur at other times during the day but not very often and for no apparent reason. Some days no sounds were uttered during the observation period. When the sounds do occur, they have quite a wide variety. Probably the present record does not represent her complete repertoire which is quite extensive, but it is a fair sample, and serves to indicate the variety of sounds used and is sufficient to show that her repertoire is larger than that reported for Laura Bridgman. Unlike most deaf-mutes, this child has a pleasing voice and most of her utterances are in a normal conversational tone, neither too low nor too high, or too soft or too loud.

In general she uses monosyllables, which are often preceded by an aspirate *h* and followed by rather muted consonants of doubtful phonetic notation. The simplest sound she makes is a mere voiced sound produced by air passing over the vocal cords, but entirely unmodified by the position of the tongue, teeth, or lips. It really cannot be represented by any of the vowels, and it is clearly not a consonant. The most frequent vowel sounds are the different *a* sounds, such as *ā ā ä*, and the short *u* sound. However, *o*, *ee*, *oo*, *au*, and *ai* sounds are also heard, though not as frequently as the different *a* and *u* sounds. The aspirate *h* frequently begins an utterance, and a rather prolonged *mmm* sound, and a soft *r* sound are favorite endings when the final sound is not muted. A favorite monosyllable is *mmm* which

¹Smithsonian Contributions to Knowledge, 1850, Vol. 2, Article 2.

²The writer is indebted to Dr. Florence L. Goodenough, who collaborated with her in the observations and in the recording of the sounds, and who has made many helpful suggestions and comments in this interesting case.

TABLE 1
NUMBER OF SEIZURES AS A PERCENTAGE OF THE NUMBER
OF PECKING RESPONSES

Pecking responses	Percentage of seizures	
	Normal chicks	Monocularly blind chicks
1-20	9.0	6.2
21-40	27.0	18.7
41-60	22.0	20.2
61-80	31.0	36.3
81-100	30.0	32.5
101-120	42.0	50.0
1-120	26.4	26.5

were placed before each chick, and after 40 pecking responses, the remaining grains were counted. The monocularly blind secured 76% of their grains and the normal chicks secured 73%, showing still no reliable difference in accuracy.

After this test the right eye of each chick that had been monocularly blinded was opened by applying ether to the collodion. On the other hand, collodion was applied to the right eye of each chick of the previously normal group. All were immediately put into the dark chamber for four hours to adapt to the ocular changes without exposure to visual stimuli. They were then given 40 more pecking responses at 40 grains. Those previously monocularly blind secured 67% of their grains, and those previously normal secured 72%. Comparison with the records made four hours earlier reveals little or no effect from the introduction of either monocular or binocular function at the age of seven days when all previous responses have been performed under the opposite ocular condition.

Throughout the experiment the monocularly blind chicks pecked in a normal manner. No chick ever turned one eye directly toward food as chicks sometimes do to moving objects. The bill was pointed toward the feeding surface at all times.

However, the chicks made monocularly blind at 24 hours of age often pointed the bill and often struck with an angle slightly less than 90 degrees between the feeding surface and the side of the head containing the functional eye. In normal chicks the angle is 90 degrees, varying little. The monocularly blind chicks also tended to peck at grains near their feet and, of course, at grains to their left side. These peculiarities did not seem to appear in the 40 pecks allowed to the chicks made monocularly blind at seven days.

A test of reaction to distance, other than the pecking response, was made at 100 hours, just after the 120 initial pecking responses. Chicks were placed individually on an 18-inch pedestal. Other chicks were placed on the floor below. Only one chick, a normal one, consistently jumped off. Monocularly

is usually said very distinctly several times with strong emphasis. The utterances of this syllable are usually quite distinct and they are not run together in a babbling series. In addition to these initial and final sounds, *b* and *d* are the most frequent consonants. While monosyllables probably occur with greater frequency than other sounds, they do not represent the bulk of this child's vocal repertoire. A favorite vocal play is an alternation of two syllables in a rhythmic series, such as *ah bã ah bã ah bã* or varied to *ah bã bã bã, ah bã bã bã, ah bã bã bã*. Another frequent series is *ah duddle duddle, ah duddle duddle, and ah udle udle*.

Her vocal play also includes a sort of singing alternation of one vowel on two pitches, and sometimes the vowel is changed. for example *āā āā ā ā ā ā*, with the first sound of each pair high and the second low. Other sounds which have been noted in her repertoire, but which are not as habitual as those already mentioned, are *w v*, voiced and unvoiced *th, y*, and a sort of guttural grunt. It would hardly be fair to list the other common sounds not noted in the records which were kept, because, as was mentioned above, this record does not cover her whole repertoire.

The most interesting of her vocalizations is a two-syllable combination which was always used in a certain situation. Previous to the time that the child was brought under observation, she had had no experience with stairways.³ She has been taken down a short flight of steps one or more times on several of the observers' visits. On the third occasion on which she was taken down the stairs, she made a two-syllable sound *ah veuv* as soon as she felt the edge of the top step. Three trials were given on the stairway, and on each of them the same sound was uttered at the first step. The following day the sound was used again for two trials on the stairs, and four days later it was used in the same way on four out of five trials. After an interval of about two weeks, with no experience on the stairs, the same sound was again uttered in the same situation. In all, this sound has been heard during about 18 out of 20 trips on the stairway. Nearly always, it is given at the first step, but on two or three occasions it was heard when she was about half way down, or when she was coming up the steps. On several occasions when it occurred at the beginning, it was given again, sometimes four times in one trip on the stairs. About six weeks previous to the time when this sound was first noted in this situation, it was heard when the child was given a peg-board. However, it was not used when the peg-board was presented again, and was not heard again until the stair situation described above. After it was used on the stairs, it was not heard in any other situations.

³A more complete description of this child's behavior is to be published soon.

This sound is isolated and does not occur in any of her spontaneous vocal play and babbling. On one of the latest occasions when this sound was noted it occurred when the child was led into the hallway at the top of the stairs, and before she had felt the edge of the first step. There is not sufficient evidence to say that this sound is used as a word, but there is a definite association between the vocal sound and the stair situation and it seems to be a very close approach to a verbal symbol.

A comparison of the records of the two observers showed that they agreed better than was expected in their recording of the sounds made. The number and frequency of the utterances checked almost exactly, as did the vowel-consonant ratio. In some instances the separation of the syllables differed in the two records, and the method of indicating the vowel sometimes varied. A careful check involving the interpretation of the records by each observer brought out the fact that they really indicated the same sounds by different symbols, the one making more use of diacritics than the other.

In summarizing, it may be said that unlike most deaf-mutes, this child has a pleasing voice and utters practically no disagreeable sounds. She uses monosyllables, reduplicated monosyllables, and disyllables, which are repeated in rhythmical series. There is one disyllable utterance which is always used in the same situation.

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A CASE OF CONGENITAL AUDITORY APHASIA

Among the specific disabilities often brought to the clinical psychologist for study, none is perhaps more veiled than that of congenital aphasia. The diagnosis of the condition itself is complicated by the many clinical varieties and may constitute a significant, actual unexplored realm. One may assume that due to the difficulty in recognizing and studying the phenomenon the various categories may be qualitative or be possessed to a more or less degree in cases we now consider as feeble-minded or backward. The writer has found such to be the case in the condition of alexia in a series of unpublished studies. It is also conceivable that the varied clinical types may be considerably related. There is little doubt but that many cases are pseudo feeble-minded, due to an inadequate technique for the study of the condition. This is particularly true in the cases of congenital auditory aphasia, definitized by a lack of understanding of the spoken word, with demonstrable presence of the sense of hearing. Attention has been given to the cases of acquired aphasia for many years and the literature is very complete regarding this condition. On the other hand,

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